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# SCIENCE

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FRIDAY, NOVEMBER 23, 1900.

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

## GERMAN SCIENTIFIC APPARATUS.

TO THE EDITOR OF SCIENCE: At the International Exposition, Paris, 1900, the jury having in charge Group III., Class 15, Instruments of Precision, Money's and Medals, were very much impressed with the German exhibit. This exhibit was arranged in a different way from that used by any other nation. Germany made a joint exhibition of mechanicians and opticians, and arranged their apparatus in sections embracing certain classes of instruments, and thus departed from the usual custom of arranging the exhibits under various firms. This enabled the jury to see at once all instruments of the same kind grouped together in one case.

The German Association printed complete catalogues describing and illustrating the apparatus exhibited, and these catalogues and descriptions were of very great assistance to the jurors in making awards.

The catalogues printed an introduction, which gave in a very condensed form the history of the work done in Germany in improving the manufacture of instruments of precision. I enclose an English translation of this introduction furnished by the German Association, and suggest that it be published in full in SCIENCE, inasmuch as it shows by what methods the German mechanicians have been able to produce such splendid results.

J. K. REES,

Member of the Jury, Group III., Class 15.

For the series here described, the American Museum and Mr. Jesup, the Maecenas of American ethnology, deserve hearty praise. It is now in order for others of our great museums to wake up and let us hear from them.

O. T. MASON.

#### BOOKS RECEIVED.

*Geometrical Optics.* R. A. HERMAN. Cambridge University Press. New York, The Macmillan Co. Pp. x + 344. \$3.

*Photographic Optics.* OTTO LUMMER. Translated and augmented by SYLVANUS P. THOMPSON. London and New York, The Macmillan Co. 1900. Pp. xi + 135. \$1.90.

*The Elements of Hydrostatics.* S. L. LONEY. Cambridge University Press. New York, The Macmillan Co. 1900. Pp. x + 248 + xii. \$1.00.

*Botany.* L. H. BAILEY. New York and London, The Macmillan Co. 1900. Pp. xiv + 355. \$1.10.

*A Text-book of Important Minerals and Rocks.* S. E. TILLMAN. New York, John Wiley & Sons; London, Chapman & Hall (Ltd). 1900. Pp. 186. \$2.00.

#### SCIENTIFIC JOURNALS AND ARTICLES.

THE *Bulletin of the American Geographical Society* for October 31, 1900, contains an excellent picture of the late president of the Society, the Hon. Charles P. Daly, which forms the frontispiece of this number. Judge Daly was the honored president of this, the oldest Geographical Society in America, and the portrait painted by Harper Pennington forms a fitting memorial of the thirty-five years of active service to the Society. The number contains a larger series than usual of what might be called new articles. First among these is an article upon the 'Ethnology of Madagascar,' by the Hon. W. H. Hunt, of Tamatave, dealing largely with the tribal names and the early immigrations, showing that there must have been a series of migrations from an Asiatic source. The second section of the paper discusses the early maps of the island, and then takes up the geography and cartography of Madagascar as developed between 1897 and 1899. This new work is due largely to the initiative of General Gallieni. This is followed by an article descriptive of the 'Heaths and Hollows of Holland,' by Dr. W. E. Griffiths, a

bright and entertaining tale of this 'water-logged' country and its people. 'Korea's Geographical Significance' is discussed by H. B. Hulbert, of Seoul, in a scholarly paper showing the relations brought about by this stepping stone from Asia to Japan, giving the results produced as a link between two widely separated branches of the Turanian stock; and then again when serving as a barrier between active Japan and ambitious Russia. Mr. Henry Gannett, of Washington, gives a careful *résumé* of the recent census of Porto Rico. This new addition to our domain has a population of 963,243, thus showing a very dense population of its 3,600 square miles. An outline sketch of the geography of British Honduras is given by Hon. W. L. Avery, of Belize. This is followed by an account of a trip through the silk and tea districts of Kiangnan and Chepiang, by E. S. Fischer. The portion of the *Bulletin* devoted to notes in this number is particularly full, and covers the departments of physiography, map notices, climatology, geographical education and the general geographical record. Cosmos Mindeleff gives a full account of the use and manufacture of geographical relief maps, and M. Henri Froideveaux gives a sketch of geography at the Paris Exposition. At the end of the number there is a picture of the new home of the Society, Manhattan Square on 81st street, giving a view of the front of the building and plans of the grounds and library floors. The enterprise of the Council in constructing this building as a repository for its fine library and a commodious place for the intercourse of the Fellows of the Society, is deserving of the highest praise.

The *Plant World* for October opens with 'Notes for the Beginner in the Study of Mosses,' by F. H. Knowlton, the first of a series on the lower plants. A. S. Hitchcock describes 'Collecting Sets of Plants for Exchange'; E. J. Hill has 'An Observation on the Water-Shield (*Brasenia peltata*), dealing with the dissemination of its seed; Charles Newton Gould describes the 'Radiate Structure of the Wild Gourd' (*Curcubita foetidissima*), and Joseph Crawford has some 'Notes on Ophioglossum.' In the supplement devoted to 'The Families of Flowering Plants,' Charles Louis Pollard deals

with the orders Verticellatæ, Piperales, Salicales and Juglandes and their allies.

THE *Journal of the Boston Society of Medical Sciences* for October begins with a discussion of 'The Antitoxin Unit in Diphtheria,' by Theobald Smith, detailing various experiments made, and concluding that at present we cannot do better than to utilize the standard provided by Ehrlich which is described in the paper. John Lovett Morse has an abstract of a paper on 'The Serum Reaction in Fœtal and Infantile Typhoid,' and Albert P. Matthews describes 'Artificially produced Mitotic Division in Unfertilized Arbacia Eggs,' caused by lack of oxygen, heat and the action of alcohol, chloroform and ether. Martin H. Fischer has a preliminary communication on 'The Toxic Effects of Formaldehyde and Formalin,' and William Sydney Thayer has some 'Observations on the Blood in Typhoid Fever,' being an analysis of the examinations of the blood in typhoid fever made in the Johns Hopkins Hospital during eleven years.

#### SOCIETIES AND ACADEMIES.

##### BIOLOGICAL SOCIETY OF WASHINGTON.

THE 327th regular meeting was held on Saturday evening, November 3d.

Under the head of 'Notes' F. A. Lucas described a specimen of the buffalo-fish, recently received by the U. S. National Museum, which had no mouth, the bones of the jaws having failed to develop. The fish must have fed by means of the gill openings and had attained a weight of more than a pound when caught. W. H. Dall called attention to the discovery, by Mr. T. Wayland Vaughan, of a fossil coral reef in Decatur Co., Georgia. This reef, which was of Oligocene age, resembled the fossil reefs in the Island of Antigua and was noteworthy from the large number of species represented, the reefs of the Tertiary beds usually being poor in the number of species of corals.

Under the title, 'Insects affecting Cotton,' L. O. Howard, following the 'symposium on cotton,' which occupied the last meeting of the Society, made some observations on the principal insect enemies of the plant. He presented accounts of *Aletia xylinâ*, *Heliothis armiger*, *Dysdercus suturellus*, and *Anthonomus grandis*, noting

various outbreaks of these pests and describing their habits, transformations and the remedies employed.

Henry James spoke of 'Recent Progress in Forestry,' saying that the great obstacles to improvement in the management of forests in America were first, from the point of view of a forester, the new trees and conditions which have made the application of European methods in this country impossible, and, second, the almost total lack of examples of successful forest management.

During the last two years, however, this condition of things has greatly improved. The offer of the Division of Forestry, through the Department of Agriculture, to examine forest tracts and prepare 'working plans' for their management free of charge, has been taken advantage of on every side; and it has thus been made possible for the division to give object lessons in forest management in many parts of the country, and to gain knowledge and experience in a most practical way. In New York, for instance, a working plan is now being prepared for a part of the State Forest Preserve in the Adirondacks. On the Pacific coast the day of conservative lumbering is being brought nearer by investigations of the habits of growth and reproduction of some important lumber trees. These are making it clear among other things that the Red Fir and the Redwood reproduce more easily and will grow to a merchantable size much sooner than has hitherto been supposed. Similar observations are being made in other parts of the country, and interest in forestry is everywhere spreading rapidly. This is partly because people are realizing the importance of ample forest resources and a steady supply of water, partly because foresters can more often get down to terms which appeal to practical landowners. It means that soon many States will be following the example of Indiana, Pennsylvania and one or two others in taking hold in earnest of such important problems as those relating to protection from fire and reform in forest taxation. Forestry is appearing daily as something practical and desirable to more and more owners of forest land and voters generally who shape legislation.